

Juvenile Chinook salmon (*Oncorhynchus tshawytscha*) utilization of estuarine distributary channel and nearshore marine habitats of the Snohomish River, Washington.

Mindy Rowse, Kurt Fresh, NOAA Fisheries*

Brian Keldar, Tulalip Tribes

Anna Kagley, NOAA Fisheries

Keywords: Chinook salmon, estuary, juvenile, habitat, utilization

As part of an ongoing research program we have studied the spatial and temporal patterns of habitat use by juvenile Chinook salmon in mainstem and distributary channels, off-channel tidal marsh areas, and the shallow water marine zone in the Snohomish River. We suggest that habitat use (e.g., abundance or residence time) is determined by both available habitat attributes and life history strategies of the fish. We discuss selected biological and physiochemical attributes of habitat quality with fish presence and abundance. We hypothesize that this relationship between habitat and life history diversity is important to overall population survival and the resulting return of adults. Comparisons of landscapes, fish densities, and data in other large PS/GB river systems to the Snohomish River are made that provide insight into the importance of specific habitat attributes. The emerging landscape concepts of complexity of off-channel habitats in relation to “connectivity” (accessibility) of suitable habitats and “opportunity” for rearing in these habitats may be especially important to defining fish use. We discuss why these landscape factors are important considerations in protection and restoration actions for Chinook salmon recovery in the Snohomish River.